AFFIDAVIT OF CHRISTOPHER J. BOYER

ON BEHALF OF AMERITECH ILLINOIS

ILL. C.C. DOCKET 00-0393

I. BACKGROUND

1. My name is Christopher J. Boyer. My business address is Three Bell Plaza, Dallas, Texas 75202. I am employed by SBC Management Services Inc., a subsidiary of SBC Communications Inc. ("SBC"). My position is General Manager - Network Regulatory for SBC's incumbent local exchange carriers ("ILECs").

2. My current responsibilities include representing the planning, engineering, and operations of SBC's ILEC networks, including that of Ameritech Illinois, before both federal and state regulatory bodies. In particular, my current responsibilities include such representation for Project Pronto.

3. I have a Bachelor of Science - Business Administration degree from the University of Kansas in Lawrence, Kansas. Additionally, I have a Master's of Business Administration degree in Finance from the University of Houston in Houston, TX. I have also completed company internal training related to telecommunications network fundamentals; and special services provisioning, maintenance and repair.

4. From 1993 through 1998 I held various positions responsible for customer service and special services circuit provisioning and maintenance within Southwestern Bell Telephone Company ("SWBT"). In late 1998 I assumed wholesale product management responsibilities for Frame Relay, Asynchronous Transfer Mode ("ATM") and Broadband Services for the SBC ILECs. In this role I was

responsible for the product development of the SBC Broadband Service offering to CLECs over the Project Pronto network architecture. This responsibility included leading an inter-disciplinary team within SBC, including the various network organizations responsible for the deployment, service provisioning, and maintenance of the Project Pronto architecture. Additionally, on behalf of SBC's ILECs, including Ameritech Illinois, I hosted an ongoing CLEC collaborative and Broadband Service trial for the purpose of discussing regulatory, network/technical and product-specific issues associated with the SBC ILECs' Broadband Service product and the Project Pronto network architecture in general. I assumed my current responsibilities in December of 2000.

II. PURPOSE

5. The purpose of this Affidavit is to support Ameritech Illinois' Application for Rehearing of the Commission's Order in Docket No. 00-0393, with respect to the Order's conclusion that Ameritech Illinois should be required to "unbundle" the Project Pronto network architecture and permit CLECs to "collocate" CLEC-owned line cards in ILEC provided Project Pronto equipment. I will address factual and policy issues generally related to the Project Pronto architecture, the impact of this architecture on Ameritech Illinois' existing copper loops and subloops, and outline the proposed SBC Broadband Service offering (providing CLECs competitive wholesale access to the Project Pronto platform). Once this framework is established, I will address the specific conclusions by the Commission in this proceeding. This discussion will include the technical infeasibility of offering the

so-called unbundled network elements ("UNEs") created as a result the Commission's Order and the so-called "collocation" of line cards in the Channel Bank Assembly units in the Project Pronto Next Generation Digital Loop Carriers ("NGDLC") .

III. PROJECT PRONTO

6. SBC's "Project Pronto" initiative consists of an investment of over $6 billion to, among other things, rapidly expand the availability of advanced telecommunications services to millions of Americans that would otherwise not have the alternative of Digital Subscriber Line ("DSL") service today. Traditional central office-based Digital Subscriber Line Access Multiplexers ("DSLAMs") and copper loops can typically extend DSL service to end users residing within approximately 18 thousand feet of a Serving Wire Center ("SWC"). Project Pronto involves the placement of fiber and remote terminals ("RTs") that at a high level move the DSLAM functionality closer to the end user location, and thus expand the DSL capability of the ILEC network to end users that reside beyond the traditional 18 kft barrier. This would expand the ready availability of DSL service using the SBC ILECs' networks from an existing base of 40% of all SBC end users to nearly 80% of those end users upon completion.

7. SBC moved forward with deployment of Project Pronto following extensive negotiations and proceedings before the FCC that lead to a set of commitments[1] agreed to by SBC to ensure that the deployment was conducted in a pro-competitive

manner. As a result of these commitments, SBC currently offers (in its other 12 states outside of Illinois) to affiliated and non-affiliated CLECs a cost-based wholesale "Broadband Service" that enables such carriers to provision an ADSL service to end users served by the Project Pronto architecture.

8. The deployment of DSL-related Project Pronto facilities and the associated Broadband Service provides to consumers and businesses alike an additional competitive alternative to other forms of advanced services, such as cable modem service, which alternative otherwise would not be available. Therefore, as a result of the increased availability of ADSL service, Project Pronto would promote competition by providing to consumers an additional alternative to cable modem service. Absent the deployment of DSL-related Project Pronto facilities, the choices for consumers residing beyond the loop length limitations outlined above would, for all practical purposes, be limited to non-DSL broadband technologies, such as cable modems. In effect, both ILEC-affiliated and non-affiliated DSL providers would be locked out of nearly 50% of the advanced services marketplace.

9. This result is detrimental not only to consumers and DSL providers but also to the economy as a whole. SBC's planned investment in Project Pronto would benefit both service providers and vendors alike, by placing more investment within the telecommunications sector. Furthermore, by increasing the availability of broadband Internet access, Project Pronto would serve to enable the Internet economy - making such services as e-commerce, telecommuting, telemedicine, distance learning, video-on-demand, streaming video, Voice over Internet Protocol

[1] SBC's voluntary commitments in relation to Project Pronto were adopted by the FCC as a portion of the SBC/Ameritech Merger Commitments and are subject to the terms of the merger commitments as defined

("VoIP") and Voice over DSL ("VoDSL") more viable and robust alternatives in the future.

IV. PRONTO NETWORK ARCHITECTURE

10. Project Pronto is intended to achieve its goal of increasing the availability of DSL services through the deployment of a network architecture that effectively moves the DSLAM functionality closer to end user locations that cannot be served using traditional central office-based DSL technology. This is accomplished through the placement of several new and/or upgraded components within SBC's network:

- Remote Terminals ("RT") equipped with Next Generation Digital Loop Carrier ("NGDLC")[2] systems capable of supporting both voice (e.g., POTS) and data (e.g., DSL) services;
- Fiber optic facilities providing transport between the RT and the Serving Wire Center ("SWC") for POTS and DSL;
- Optical Concentration Devices ("OCDs") placed within the SWC used to aggregate DSL traffic to the appropriate DSL service provider; and
- Central Office Terminal ("COT") equipment used to route POTS traffic to the local switch.

11. In order to create an ADSL service over this architecture, each of these components must interact together seamlessly to create an end-to-end service . In order to provide this service, a traditional copper facility is used to transport both

by the FCC SBC/Ameritech merger order in CC Docket 98-141.

[2] The predominant form of NGDLC that SBC is deploying across its ILEC territory is the Alcatel Litespan 2000.

voice and data traffic from the end user location to the RT site. This copper facility is similar to the same copper feeder and distribution facilities used to provide voice service to the end user location today. The voice traffic is provided over the low spectrum portion of this facility and the data traffic over the high spectrum portion of this facility. Within the RT site, the copper facility terminates in the NGDLC equipment, (predominantly the Alcatel Litespan 2000).

12. The Litespan 2000 system contains various components, including line cards, that enable the DSL service capability. At a high level, the entire system functions in a similar manner to a DSLAM. The end user copper facility terminates directly on the backplane of the Litespan 2000 equipment. Subsequently, the voice and data traffic is routed to a line card. The line card serves to split the voice and data (e.g., DSL) traffic and, along with the other portions of the Litespan system, provides the DSL functionality for the high spectrum portion of the loop. Today, the only line card that is available for use with the Litespan 2000 system is the Alcatel ADSL Digital Line Unit ("ADLU") card, which enables an ADSL functionality to be placed upon the end user copper facility.

13. From the Litespan 2000 equipped RT site, the voice and data (e.g. DSL) traffic are transported over separate physical fiber optic transport facilities to the central office. The DSL traffic is routed over an Asynchronous Transfer Mode ("ATM") based OC-3c transport facility. The voice traffic is routed over a traditional SONET based OC-3.

14. Within the serving wire center, the data OC-3c terminates in a device referred to as the Optical Concentration Device ("OCD"). This device is an ATM packet switch

that provides, among other things, the capability to aggregate DSL traffic to the appropriate DSL service provider, in this case a CLEC. For example, in a typical Pronto wire center, 16-24 RTs would be placed outside of a given wire center. Therefore, 16-24 data OC-3cs would be routed back to the serving wire center. Each of these data transport facilities would contain DSL traffic belonging to any number of DSL service providers. The OCD is used to aggregate, for each CLEC, all of the DSL traffic on these multiple facilities that belongs to that CLEC, for delivery to that CLEC's collocated area within the serving wire center. The OCD provides CLECs access to their DSL traffic as provisioned over Project Pronto.

15. The voice OC-3 facility terminates on a central office terminal, or COT. From the central office terminal, the voice traffic is in most cases routed directly to the local voice switch, which provides dial tone to the end user customer premises. However, in those instances where a CLEC provides the voice service, in addition to the DSL, the voice traffic is de-multiplexed within the COT and delivered to the Main Distribution Frame ("MDF"), in order to be extended to the CLEC's collocation area.

16. The Project Pronto network architecture is illustrated in Attachment CJB-1 to this affidavit.

V. PROJECT PRONTO DEPLOYMENT

17. Project Pronto involves the placement of either new RTs equipped with NGDLC systems and/or the upgrading of existing RT sites. In the case of a new RT site, all of the components mentioned above would equate to new capital investment by

SBC. In the case of an upgrade of an existing RT site, although the NGDLC itself and associated fiber and copper facilities are in place, new common control cards, line cards and associated software would have to be installed and activated within the RT site to enable the DSL capability. Regardless of a new or upgraded RT site, installation of the OCD packet switch in the SWC also is required to provide data connectivity to the CLEC provider of DSL service. The Project Pronto network is designed to deploy OCDs precisely to provide multiple CLECs with access to the Project Pronto network architecture. These OCDs also constitute new investment on the part of SBC to enable competitive access to the Project Pronto network architecture. SBC estimates that its investment in OCDs exceeds $200 Million to date .

18. The NGDLC systems, OCDs, fiber and copper facilities, cards, software and associated systems constitute significant additional capital investment on the part of SBC. Under its original planned deployment, Ameritech Illinois would have invested nearly $519 Million in additional capital to deploy these components throughout Illinois. However, as a direct consequence of the onerous regulatory burden that would be placed upon Ameritech Illinois as a result of the Commission's Order, SBC has ceased deployment of DSL-related Project Pronto facilities in Illinois.

VI. FORMS OF DSL SERVICE PROVIDED OVER THE PRJECT PRONTO ARCHITECTURE

19. The Project Pronto architecture currently supports only ADSL. The line card determines the vintage of xDSL provided to the end user. At this time, the only line card available to be deployed by SBC in conjunction with Project Pronto is the ADLU card – which provides an ADSL service functionality.

20. There are several reasons for this. First, SBC has always portrayed Project Pronto as a means to extend broadband high speed Internet access capability to the "mass market" (*i.e.*, residential and small business customers), a segment of the public historically less able to readily obtain broadband services. Second, the bandwidth needed for high-speed Internet access is generally asymmetric (meaning end users require large amounts of bandwidth downstream toward the end-user for downloading and smaller bandwidth upstream toward the Internet for uploading). It is widely accepted within the industry that ADSL is the best form of xDSL to provide high-speed Internet access. In contrast, large business customers generally have had access to broadband capabilities for many years. Third, residential and small business end users often do not want separate lines into their premises for Internet access. Similarly, many CLECs want to use the existing POTS line into an end user's premises to be able to offer DSL service more quickly. ADSL is the form of DSL that provides the best match for these three criteria. Furthermore, ADSL technology is more readily available in NGDLC equipment than the other forms of xDSL.[3]

[3] As of this date, Alcatel, the manufacturer of the Litespan 2000 system , only manufactures ADSL-capable line cards. No other line cards, such as an SDSL line card, are available at this time. Furthermore, Alcatel

21. In support of its Order to create new so-called UNEs in this proceeding, the Commission asserted that "the wholesale service offering leaves all control in the hands of Ameritech Illinois as to the types of xDSL service that may be provided."[4] CLECs also have argued that Ameritech Illinois must provide CLECs the ability to "collocate" CLEC owned line cards in the Ameritech Illinois deployed Litespan equipment, in order to enable CLECs to diversify their offerings from the ADSL capability that would be made available to all carriers by Ameritech Illinois.[5] As explained later in this Affidavit and in the Affidavit of Mr. James Keown, CLEC line card collocation creates operational and capacity problems that eliminate the continued economic viability of deploying DSL-related Project Pronto facilities in Illinois. Simply put, had SBC been presented with an obligation to provide CLEC line card "collocation" at the outset of Project Pronto, it is distinctly possible that SBC would not have moved forward with Project Pronto in any of its ILECs' service territories under this hypothetical obligation.

22. Furthermore, at this point in time, CLEC line card collocation will not provide the implied benefit of the Commission's Order (the ability to provide xDSL service other than ADSL) because, due to vendor limitations, the only form of xDSL service capable over this architecture is the ADSL service. The use of the ADSL capability of the Project Pronto architecture, in States where it is deployed, is

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has no plans to develop an SDSL line card as SDSL is considered within the industry to be a non-standard form of xDSL.

[4] ICC Order 00-0393 at 24

[5] As outlined further in this Affidavit, were Project Pronto deployed within Ameritech Illinois as originally planned, Ameritech Illinois would provide CLECs the ability to provision an ADSL service over the Project Pronto architecture via a product offering referred to as the Broadband Service.

currently offered by SBC to all affiliated and non-affiliated CLECs through SBC's Broadband Service product offering.

23. In addition to the vendor limitation that I identified above, due to the spectral inference problems associated with xDSL, the FCC has already concluded that the only form of xDSL that would enable use of both the HFPL for data service and the low frequency portion of the copper loop for voice service (the ability to carry both the POTS and DSL service on the same copper facility) are ADSL and rate adaptive DSL.[6] Providing CLECs the ability to "collocate" line cards for the purposes of deploying any other form of xDSL, other than ADSL, is not only technically infeasible (due to the fact that no line card other than the ADSL line card exists today) but also inconsistent with the FCC's rationale in support of its unbundling of the HFPL.

24. Simply put, CLECs could not utilize the HFPL UNE with other vintages of line cards placed in this NGDLC equipment. If, in a hypothetical case, a CLEC were provided the ability to "collocate" an SDSL line card, the CLEC would have to utilize the entire spectrum (both the low and high frequency spectrum) of the copper facilities from the RT to the end-user's premises in order to provide such a service. Therefore, because the CLEC could not offer this service by leasing the HFPL, a full copper facility would have to be dedicated to the SDSL service provided by this

[6] The FCC concluded in the Line Sharing Order at 71 "We require incumbent LECs to provide unbundled access to the high frequency portion of the loop to any carrier that seeks to deploy any version of xDSL that is presumed to be acceptable for shared-line deployment in accordance with our rules. xDSL technologies that meet this presumption include ADSL, as well as Rate-Adaptive DSL and Multiple Virtual Lines (MVL) transmission systems, all of which reserve the voiceband frequency range for non-DSL traffic. Among these, ADSL is the most widely deployed version of xDSL that is currently presumed acceptable for deployment on a shared line."

CLEC. The voice service would have to be placed on a separate, individual copper facility.

25. Therefore, any form of xDSL other than ADSL that a CLEC might desire to deploy via "collocation" of a CLEC-owned line card would require that SBC provide to such CLEC a dedicated copper facility to support the data service. This is something fundamentally different from the HFPL UNE. In fact, the Commission's decision in this proceeding does not create any additional capabilities for CLECs using the HFPL. As a result, any cost efficiencies gained via use of the HFPL are negated under the Order. The additional costs to Ameritech Illinois caused by the Order would have to be recovered from CLECs, who in turn would have to recover these costs in some manner – most likely via an increased price for the xDSL service provided to the end user. And if the CLECs could not pass on those costs, they would cease purchasing the underlying UNEs.

26. Should the vendors of SBC's NGDLC equipment make available additional line cards in the future, SBC has committed as part of the FCC's Project Pronto proceedings, and is required by the FCC's Project Pronto Order (FCC 00-336), to host industry-wide collaboratives to discuss with CLECs the development and deployment of such future features and functions over the Project Pronto equipment. In fact, SBC stated in its voluntary commitments (adopted by the FCC) that the "SBC/Ameritech incumbent LECs will approach such discussions from the presumption that it seeks to optimize the use of their network by affiliated and

unaffiliated carriers and support the development of new xDSL features and functions."[7]

VII. OVERLAY NETWORK

27. The Project Pronto architecture is an "overlay network." This means that Pronto deployment will not remove any existing copper facilities. Project Pronto would overlay existing copper loops where they exist today in Ameritech Illinois' network. Furthermore, Ameritech Illinois has no current plans nor plans under development to retire copper loop plant as a result of the Project Pronto deployment. This is confirmed by SBC's voluntary commitments, which the FCC adopted and appended to its Project Pronto Order, which granted SBC's request for its ILECs to be allowed to own certain parts of the Project Pronto architecture.

28. Due to the overlay nature of the Project Pronto deployment, if Ameritech Illinois were to deploy DSL-related Project Pronto facilities, CLECs would continue to have available to them all of the existing options for providing DSL services that are available to them today. In fact, Project Pronto would only serve to expand the options available to CLECs to provision ADSL service to end users in the SBC ILEC territories. For example, absent the deployment of DSL-related Project Pronto facilities, one of the primary means that a CLEC has to provision an xDSL service to end users residing beyond the 18 kft loop length limitation of a central office-based DSLAM, is to physically place a DSLAM in the field. Such a piece of

[7] FCC Project Pronto Order (00-336), page 42, SBC Voluntary Commitments.

equipment would have to be placed within either an existing SBC ILEC structure, such as a remote terminal site, or a CLEC structure placed outside the central office in the loop portion of the network. In addition to placement of the , DSLAM in the field, the CLEC would also have to obtain access to fiber-based transport from the structure in which the DSLAM was placed back to the collocation arrangement within the SWC. A CLEC could accomplish this in several different ways: by purchasing Ameritech Illinois-provided dark fiber and/or optical sub-loops; or by deploying its own fiber optic facilities for such purpose or purchasing such fiber from a third party provider. The CLEC would also have to obtain access to copper sub-loops from the location of the DSLAM structure to the end user location. All of these options would remain available to CLECs if Ameritech Illinois were to deploy DSL-related Project Pronto facilities.

29. Deployment of such DSL-related Project Pronto facilities and the Broadband Service offering would enable CLECs to reach end users beyond the 18 left central office loop length in a more cost-effective manner.[8] The Broadband Service would enable CLECs to provide this ADSL service to such end users in a manner that would keep the retail price point for ADSL service competitive with other forms of retail broadband Internet access service, such as cable modem service. Should a CLEC continue to desire to deploy its own equipment to provide other forms of xDSL not capable of being provided and/or offered over the DSL-related Project Pronto facilities and Broadband Service offering, CLECs would continue to have all of the options outlined above available to them to facilitate such deployment.

VIII. SBC BROADBAND SERVICE

30. The Project Pronto proceedings before the FCC were designed to ensure that access to the Project Pronto architecture was offered in a pro-competitive manner. One of the commitments made by SBC in these proceedings, and incorporated by the FCC in its Project Pronto Order, was that "the SBC/Ameritech incumbent LECs will offer all telecommunications carriers, including their separate Advanced Services affiliate(s), nondiscriminatory access to a combined wholesale broadband service where the SBC/Ameritech incumbent LEC deploys a NGDLC architecture that supports both POTS and xDSL services."[9] Furthermore, SBC committed that "SBC's incumbent LECs will offer to all telecommunications carriers, including their separate Advanced Services Affiliates, a combined voice and data service offering where the SBC/Ameritech incumbent LEC deploys a NGDLC architecture that supports both POTS and xDSL services."[10]

31. Consistent with these commitments, in those states where DSL-related Project Pronto facilities are deployed, SBC is offering the Broadband Service product offering on a non-discriminatory basis to all CLECs, including SBC's advanced services affiliates, where the Project Pronto DSL network infrastructure is deployed. The Broadband Service is currently being offered by SBC in each state within its ILECs' operating territory, with the sole exception of Illinois. Where deployed, the Broadband Service is a new offering that is being made available in addition to all

[8] It should be noted that the Ameritech Illinois Broadband Service offering, if it were still available, would be priced in accordance with existing UNE pricing rules as defined by the Illinois Commerce Commission and therefore represents the lowest theoretical rate possible for this offering.
[9] FCC Project Pronto Order (FCC 00-336) page 35, SBC Voluntary Commitments.

of the options for providing DSL services already available to CLECs under the current FCC rules.

32. At this time, the Broadband Service is not being made available in Illinois due to the significant cost barrier created by the Order in this case.

33. The Broadband Service consists of two distinct service configurations being made available to CLECs. The first service configuration provides to CLECs the capability to provision an ADSL service to an end user customer premises over the Project Pronto network architecture. The second service configuration provides to CLECs the capability to provision both a voice and data (ADSL) service over the Pronto network infrastructure. CLECs must collocate in the serving wire center in order to receive either of these service configurations.

34. In order to provision the first service configuration (an ADSL service over Project Pronto), CLECs must purchase three (3) underlying network service arrangements creating an end-to-end ADSL solution. Such service arrangements are integrated to one another and, as a technical matter, cannot be offered as separate stand-alone unbundled network elements, as I discussfurther below.

35. In addition to the data service configuration outlined above, SBC is offering CLECs a combined voice and data service over the "Project Pronto" network infrastructure. The combined voice and data service configuration provides to CLECs the same underlying network service arrangements as required to provision the data path over the "Project Pronto" network architecture. however, the combined voice and data

[10] *Id.* page 36

configuration provides to CLECs the capability to provision the voice path in addition to the data.

36. This is accomplished via a fourth network service arrangement. .

37. In conjunction with this combined service offering, CLECs would have the capability to order an unbundled switch port (including number portability) and combine that switch port with the voice path in their collocation arrangement.

IX. ATM QUALITIES OF SERVICE AND PROJECT PRONTO

38. Under either of the Broadband Service offering configurations, use of the data fiber optic transport path from the RT to the OCD is provided via a permanent virtual circuit, or PVC. PVCs are typically provided at various ATM Quality of Service ("QoS") levels. The ATM QoS classes define the manner in which bandwidth is allocated to an end user. For example, in the case of an Unspecified Bit Rate ("UBR") PVC, the end user is provided whatever amount of bandwidth is available at that precise moment in time over the network. A practical example of this is high speed Internet access. When an end user goes online, that specific end user would be provided whatever amount of bandwidth is available – which in some instances could be greater than 1.544 Mbps, or in some instances as low as 256 Kbps, depending upon the service offered by the DSL service provider. Thus, the actual speed achieved is unspecified, dynamic and changes over time.

39. The only other form of ATM QoS capable of being provided over the Project Pronto architecture is a Constant Bit Rate ("CBR") QoS. CBR guarantees the end user a specific speed and/or amount of bandwidth. One likely use of this type of service

would be for a medium-sized business that desired a constant guaranteed service for the transmission of data traffic between two points – similar to a traditional T1 service.

40. Through its Broadband Service, SBC offers PVCs using both the UBR and CBR ATM QoS classes. However, the CBR QoS class is limited to specific RT sites and only provides a 96 Kbps service offering, due to the severe negative capacity impacts inherent in CBR, as I later describe in this affidavit.

41. SBC's decision to offer a UBR quality of service and more limited CBR quality of service is based upon the following factors. First, SBC's intent with Project Pronto is to extend the reach of DSL to more of the general public than can otherwise readily obtain such services today. Second, the bursty, asymmetric Internet service application, which is best satisfied by the UBR QoS class, meets the needs of most end-users desiring high speed Internet access. Third, the use of other ATM QoS classes can result in significant portions of the total bandwidth capacity of the NGDLC RT and data transport facilities being allocated to or "reserved" by particular DSL end-users, and therefore, less of the total bandwidth capacity being available for the remainder of the DSL end-users. Offering QoS classes other than UBR requires consideration of the capacity of the Project Pronto architecture and the effect on the quality of other end-users' DSL services.

42. Although the Broadband Service is limited to the CBR and UBR ATM QoS offerings at this time, SBC has committed to work collaboratively in the future with CLECs and the industry at large to evaluate and introduce additional features, functions, and capabilities of the Project Pronto architecture as they become

available. Such evaluation will be subject to the criteria outlined in the FCC's Project Pronto Order.[11]

X. COMMISSION CONCLUSIONS REGARDING PROJECT PRONTO

43. The Commission has made several incorrect conclusions regarding SBC's planned Project Pronto deployment within Illinois and "unbundling" in general.

44. First, the Commission states in the Order that it "agrees with Staff and intervenors that it is technically feasible to provide Project Pronto as UNEs."[12] As I explain in the following section of this affidavit, it is not only inappropriate to require the unbundling of the Project Pronto architecture as a matter of policy but it is *also not technically feasible*. I address the technical feasibility of each of the so-called new "UNEs" in the following sections of this Affidavit.

45. Second, after the Commission concluded that it was technically feasible to "unbundle" Project Pronto as UNEs, the Commission then further concluded that such unbundling met the "impair" standard of the Telecommunications Act of 1996.

46. The unbundling of the Project Pronto architecture fails to meet the Act's impairment test. Among other reasons why this is so, as I explain below, SBC is offering CLECs (in states where it is deploying DSL-related Project Pronto facilities), through the Broadband Service, non-discriminatory access to the capability to provision an ADSL service with numerous different features. Moreoever, the Broadband Service is priced at cost-based rates using the TELRIC methodology employed by each state within which it is being offered. The Broadband Service

[11] Project Pronto Order, paragraph 37.
[12] ICC 00-0393 at 22

offering is a viable alternative to the full "unbundling" of Project Pronto and provides CLECs with the same functionality that would be available to them under a full "unbundling" scenario (as well as an additional DSL service option that would not be available absent Project Pronto).

47. In its Order, the Commission asserts that "Ameritech Illinois' wholesale broadband service offering is not an adequate substitute for access to the Project Pronto network elements as UNEs. The wholesale service offering leaves all control in the hands of Ameritech Illinois as to the types of xDSL service that may be provided."[13] However, the notion that "unbundling" the Project Pronto architecture would provide CLECs any other form of xDSL other than that currently available with the Broadband Service is simply false. The primary vendor of Project Pronto NGDLCs, Alcatel, only offers an ADSL capability at this time, as is outlined in detail in the Affidavit from Alcatel. The ADSL service functionality available with the Project Pronto DSL-related facilities is already available to CLECs on a cost basis with the Broadband Service offering. Therefore, a Commission order to "unbundle" Project Pronto does not increase the CLECs' ability to provision any other form of xDSL service.

48. Along these same lines, CLECs have asserted that, due to the fact that Alcatel is only making available an ADSL form of service today, CLECs should be able to work with other vendors to develop line cards offering other forms of xDSL, and to collocate or place these CLEC-owned line cards in SBC's Project Pronto equipment.

49. This assertion by CLECs has no basis, and their position would provide no practical benefit to CLECs in any form. As is outlined in the section of my Affidavit regarding Line Card Collocation and is discussed in the Affidavit from Alcatel, the NGDLC equipment being provided by Alcatel is proprietary to that particular vendor. Alcatel does not share the proprietary software and engineering specifications that are proprietary to its equipment with any other manufacturer of equipment, nor do any other NGDLC manufacturers. Therefore, it is technically infeasible for another vendor to develop a card that offers any form of serviceover the Alcatel NGDLCs.

50. Furthermore, if Alcatel were to offer a different form of xDSL service[14] capability in the future, as is outlined in detail above, SBC has committed to work collaboratively with CLECs to discuss the potential of to deploying those features consistent with the various factors outlined in the *Project Pronto Order*. . In short, the assertion that there is a material impairment of a CLEC's ability to compete because SBC is restricting CLECs to an ADSL grade of service is false. Currently, the Project Pronto network architecture only supports ADSL. The Broadband Service, as outlined above, provides CLECs this capability at TELRIC-based rates. The "unbundling" of the Project Pronto architecture would do nothing to alter this situation – ADSL remains the only service capable of being provided over the Pronto architecture at this time.

[14] Alcatel is developing other forms of line cards that support services other than ADSL. However, such line cards are not available today. Once such cards are made available commercially from the vendor, SBC will begin to evaluate the impact of such cards upon its Project Pronto network architecture in order to determine if the placement of such cards would meet various engineering thresholds within SBC's network.

51. The Commission also asserts that "One compelling reason to unbundle Project Pronto is the inability of CLECs to offer ubiquitous xDSL based services without access to the Project Pronto as UNEs."[15] Furthermore, in outlining the intervenors' position, the Order reiterates the intervenors' position that "the ability of CLECs to provide advanced services in Illinois will be significantly impaired and Ameritech Illinois will gain a virtual monopoly on provision of ADSL to the residential market. Any alternatives available to intervenors would be inferior in terms of cost, timeliness, quality of service and ubiquity."[16]

52. Both of these are incorrect claims. First, the FCC, in the UNE Remand Order, has already held that ILECs do not have to generally unbundle packet switching because there is no impairment. If DSL-related Project Pronto facilties are deployed in a given State, this fact does not change. In other words, in those states where a Project Pronto-like DSL architecture is not being deployed (such as in other ILEC territories or, in this case, Illinois), CLECs certainly are not "impaired." For example, if a particular ILEC (such as Sprint/United) chose not to deploy NGDLCs in its network, a CLEC could not force the ILEC to purchase and deploy NGDLCs by claiming that its ability to offer DSL service was "impaired." The simple fact that SBC is undertaking its Project Pronto initiative does not "create" impairment. To the contrary, this initiative adds another DSL service option to those that are already available to CLECs today. Second, Ameritech Illinois, under its proposed Broadband Service offering, would provide CLECs access to the Project Pronto architecture. However, due to the severe negative capacity and cost ramifications of

[15] Order at 23.
[16] Id at 18

the Commission's decision this case, Ameritech Illinois has been forced to cancel its planned deployment of DSL-related Project Pronto facilities and is no longer offering CLECs the Broadband Service offering. Thus, the Order has affirmatively damaged theCLECs' options to provide ADSL service in Illinois because, due to the Order, the Project Pronto DSL service option is not available to anyone in Illinois.

53. As I noted above, CLECs assert that "any alternative" to "unbundling" Pronto (*e.g.*, the Broadband Service) would be inferior in terms of cost, timeliness and quality of service. These claims are simply false. As is explained later in this Affidavit and in the affidavit of Mr. James E. Keown, the Order would create major stranded capacity costs if Ameritech Illinois were to deploy DSL-related Project Pronto facilities.

54. The Commission also concluded that "It would be nearly impossible for any CLEC to approach the magnitude of SBC's Project Pronto effort in terms of cost and geographic scope. Even if the equivalent financial resources were available, self-provisioning would cause market entry to be so late that meaningful competition would be precluded."[17] This argument does not provide any support in relation to the impair standard. As the FCC has found, CLECs are rapidly deploying their own advanced services facilities already. UNE Remand Order, ¶ 306. And even if CLECs really did depend on ILEC facilities for advanced services, the Order will only retard market entry by those CLEC providers by depriving them of the wholesale Broadband Service.[18]

[17] Id at 23
[18] Id at 19

55. The Order also states that one of Ameritech Illinois' principal arguments was that it was technically infeasible to "line share" (e.g. provision both voice and data) over the same fiber as provided with the Project Pronto architecture. The Order discounts these claims, stating "Ameritech Illinois' witness admitted that the simultaneous transmission of voice and xDSL over a single fiber is technically feasible."[19] However, the Order fails to mention that Ameritech Illinois' witness qualified these statements by explaining that this is not technically feasible in the original planned deployment of Project Pronto in Illinois. In order to enable "line sharing over fiber," Ameritech Illinois would have to deploy additional equipment on top of the previously planned $519 million deployment. Putting aside the question of its lawfulness, such potentially mandated spending changes the business and technical assumptions and analysis that were relied on by SBC in authorizing Project Pronto investment in the first place.

56. The Order provides the following: "The Commission hereby requires Ameritech Illinois to make available to competitive providers nondiscriminatory access, at just and reasonable rates, to Project Pronto UNEs as follows:

a. Lit Fiber Subloops between the RT and the OCD in the CO consisting of one or more PVPs ("permanent virtual paths") and/or one or more PVCs ("permanent virtual circuits") at the option of CLEC;

b. Copper Subloops consisting of the following segments:

i. The copper subloop from the RT to the NID at the customer premises;

[19] ICC Order 00-0393 at 24.

ii. The copper subloop from the RT to the SAI ("serving area interface");

iii. The copper subloop from the SAI to the NID at the customer premises.

c. ADLU line cards owned by the CLEC and collocated in the NGDLC equipment at the RT;

d. ADLU line cards owned by the ILEC in the NGDLC equipment in the RT;

e. A port on the OCD in the CO; and

f. Any combination thereof, including the line shared xDSL loop from the OCD port to the NID."

57. The following sections of this Affidavit address the so-called "unbundling" of Project Pronto as a whole, the technical and policy ramifications of such a requirement, and the technical infeasibility of unbundling each of the specific new UNEs that are created under the Order, if Ameritech Illinois were to go forward with deployment of DSL-related Project Pronto facilities.

XI. GENERAL "UNBUNDLING" OF PROJECT PRONTO

58. Project Pronto cannot and should not be "unbundled" for, at a minimum, three reasons. First, the end-to-end ADSL service provisioned over the Project Pronto architecture (and offered to CLECs as part of SBC's Broadband Service) cannot be unbundled for a CLEC's dedicated use in the manner that the FCC has unbundled other network elements. Second, even if there were some compelling reason (which there is not) to "unbundle" the Project Pronto architecture, it would not be

appropriate to do so. This is because the Project Pronto architecture includes components that fall within the FCC's definition of packet switching, which the FCC declined to unbundle in its UNE Remand Order, except in extremely limited circumstances that do not apply to Ameritech Illinois. Finally, even if the FCC had not already spoken conclusively on the issue, any CLEC effort to "unbundle" Project Pronto would have to be supported by an analysis that satisfies the standards of the Act for such unbundling, which cannot be satisfied over the Project Pronto architecture.

59. In regard to the first point above, it is not physically possible to "unbundle" the Project Pronto architecture because of the manner in which the components of the underlying network architecture interact and work with one another. As I outlined above, the DSL service cannot be provided without the use of each of the major components of the Project Pronto network architecture: the copper facilities from the end user customer premises to the RT site; the NGDLC at the RT; the optical transport facilities from the RT site to the OCD; and the use of the OCD to aggregate traffic to a specific CLEC. All of these components work with one another to create the DSL service. If any one of these components is missing, it is not possible to offer a DSL service. For example, absent the OCD in the SWC, there would be no technical means for SBC to aggregate and route DSL traffic to a given CLEC. Similarly, absent the NGDLC and the optical transport facility from the RT to the OCD, there would be no means to packetize and transport data traffic from the RT to the OCD or create the PVC that is essential to the DSL service.

60. Furthermore, the DSL service does not provide an accessible end-to-end path through the Project Pronto network architecture similar to other unbundled network elements. For example, a traditional unbundled loop provides a specific physical path dedicated to the use of one end user from the end user customer premises to the main distribution frame. In a similar manner, an unbundled DSL-capable loop or a line-shared DSL capable loop also provides a distinct physical path from the customer premises to the main distribution frame for the provision of the DSL service. For a CLEC to provide DSL service to a single end user with Project Pronto, the path through the various network components would include: a copper pair from the end user's premises to the NGDLC RT; a port on a multi-port line card in the NGDLC RT; a virtual circuit established within the NGDLC RT; a virtual circuit established in the OC-3c signal riding over the fibers between the NGDLC RT and the OCD; and a virtual circuit established through the OCD to a CLEC's high-capacity port on a multi-port OCD card. As this list demonstrates, a single end user's DSL service does not occupy an accessible, physical, end-to-end path through these various network components.

61. Thus, a service provisioned over Project Pronto does not provide a one-to-one line correspondence like other UNEs. This is most easily explained by looking at the two ends of the Broadband Service. At one end (the end user's premises) is a twisted copper pair that carries only a single end user's DSL service. Yet, at the other end (the central office) is a high-speed fiber or coaxial connection to an OCD port that carries numerous end users' DSL services.

62. The purpose of using the Project Pronto architecture for the Broadband Service is the consolidation (at the OCD) of the ATM transport from RT sites scattered throughout a wire center. Therefore, this architecture allows a CLEC to physically receive the consolidated DSL signals for numerous end users scattered throughout that wire center. In contrast, a one-to-one correspondence would exist only in a situation where the CLEC physically receives individual end user DSL signals one-at-a-time (e.g., via individual all-copper loops), where both ends would be a twisted copper pair. Besides geographic consolidation, the Project Pronto architecture also provide a DSLAM functionality (which includes the conversion of a DSL signal from the "digitized" analog signal emitted by the end user's DSL modem to the packetized digital signal suitable for transmission over the CLEC's data network). In other words, if a CLEC physically receives individual DSL services one-at-a-time at the central office, the CLEC must purchase its own stand-alone DSLAM in order to put those DSL services onto its data network. In contrast, the Project Pronto architecture, via the SBC Broadband Service, eliminates the CLEC's need for a stand-alone DSLAM, allowing the CLEC to connect an OCD port (carrying numerous DSL signals from numerous and users served by different RTs) directly to its data network.

63. The second reason Project Pronto should not be unbundled is that the Project Pronto network architecture provides packet switching functionality. In its Project Pronto Order, the FCC found that the ADSL Digital Line Unit ("ADLU") card used in the Project Pronto NGDLC RT, when plugged into the NGDLC system, provides

functionality similar to a DSLAM.[20] Additionally, the FCC found that the Project Pronto OCD is ATM switching equipment.[21] Further, the FCC found in its UNE Remand Order that this type of equipment is packet switching equipment.[22] The FCC decided against a general requirement to unbundle packet switching, stating in its UNE Remand Order that "we will not order unbundling of the packet switching functionality as a general matter." The FCC went on to say: "the record in this proceeding, and our findings in the 706 Report, establish that advanced services providers are actively deploying facilities to offer advanced services such as xDSL across the country. … [C]arriers have been able to secure the necessary inputs to provide advanced services to end users in accordance with their business plans. This evidence indicates that carriers are deploying advanced services to the business market initially as well as the residential and small business markets."[23]

64. The FCC's UNE Remand Order defines the limited circumstances under which packet switching must be unbundled. Specifically, the FCC's rules provide that an incumbent LEC shall be required to provide nondiscriminatory access to unbundled packet switching capability only where each of the following conditions are satisfied:

(i) The incumbent LEC has deployed digital loop carrier systems, including but not limited to, integrated digital loop carrier or universal digital loop carrier systems; or has deployed any other system in which fiber optic

[20] FCC Project Pronto Order, paragraph 14
[21] Id at 18
[22] In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Third Report and Order and Fourth Further Notice of Proposed Rulemaking in CC Docket No. 96-98, FCC 99-238, released November 5, 1999 ("UNE Remand Order"), paragraph 303.

facilities replace copper facilities in the distribution section (e.g., end office to remote terminal, pedestal or environmentally controlled vault);

(ii) There are no spare copper loops capable of supporting the xDSL services the requesting carrier seeks to offer;

(iii) The incumbent LEC has not permitted a requesting carrier to deploy a Digital Subscriber Line Access Multiplexer at the remote terminal, pedestal or environmentally controlled vault or other interconnection point, nor has the requesting carrier obtained a virtual collocation arrangement at these subloop interconnection points as defined by § 51.319(b); and

(iv) The incumbent LEC has deployed packet switching capability for its own use.

65. Two aspects of these FCC rules warrant emphasis. The requirement to unbundle the packet switching equipment described in the fourth condition is (1) dependent on the simultaneous existence of all four of these conditions in a particular service area, and (2) is therefore also determined on an RT site-by-RT site basis.

66. These four conditions will not exist with the deployment of Project Pronto and the associated Broadband Service offering. The first condition involves the presence of DLC or the replacement of copper loops with fiber. DLC does already exist in many serving areas; also, Project Pronto deploys NGDLC in many serving areas. However, as explained previously, Project Pronto does not result in the replacement of copper loops with fiber.

[23] Id at 307

67. The second condition concerns the availability of copper loops. Copper loops will be available to CLECs in most serving areas. As explained above, the deployment of Project Pronto does not displace *any* existing copper loops.

68. The third condition concerns the ability of a CLEC to remotely locate its DSLAM equipment at an RT site. Ameritech Illinois permits CLECs to collocate their DSLAM equipment in an RT site where space and other environmental factors allow. In addition, SBC's voluntary commitments, adopted in the FCC's Project Pronto Order, enhance the CLECs' opportunity to collocate their own DSLAMs at or near Ameritech Illinois' RT sites. Specifically, Ameritech Illinois will, upon a CLEC's request where DSL-related Project Pronto facilities are deployed, either increase the size of future RT structures or provide the CLEC with an adjacent cabinet structure.

69. The fourth condition involves Ameritech Illinois' deployment of packet switching for its own use. With Project Pronto, Ameritech Illinois would not be deploying any packet switching equipment for its "own use". The DSL-capable portion of the Project Pronto NGDLC RT and the OCD equipment would be deployed by Ameritech Illinois only for CLECs' use (i.e., via the wholesale Broadband Service), including SBC's CLECs, in their provisioning of their own retail DSL services to end users.

70. In determining which network elements should be made available to CLECs on an unbundled basis, the Act requires an evaluation of whether (1) access to such network elements as are proprietary in nature is necessary; and (2) the failure to provide access to such network elements would impair the ability of the

telecommunications carrier seeking access to provide the services that it seeks to offer.

71. CLECs cannot make a case that a lack of "unbundled" access to alleged Project Pronto "network elements" meets the impair standard. First, as described above, the FCC already found that CLECs are not impaired without unbundled access to packet switching (except in limited circumstances that do not apply here). Clearly, CLECs can deploy, and already are deploying, their own packet switching equipment. Because the Project Pronto DSL architecture is based on packet switching, the CLECs are not impaired without unbundling of Project Pronto. Second,

72. CLECs could not be "impaired" by not having unbundled access to a *non-existent* broadband network and service (i.e., a broadband network and service that SBC and its affiliated ILEC have not deployed in Illinois), especially when that hypothetical network and service would only *increase* CLECs' competitive options.In short, the Broadband Service would provide CLECs with an additional option for offering DSL services to their end users, above and beyond the pre-existing network options available to the CLECs. Therefore, all of these CLECs would have a completely equal opportunity to utilize yet another option to provide DSL services. Furthermore, CLECs cannot claim that they lack alternatives other than the unbundling of Project Pronto to enable them to provide Broadband capability to end users. There are numerous other Broadband providers that have deployed or are actively deploying other networks, including cable networks and hybrid fiber/coax networks, throughout Ameritech Illinois' territory, with precisely the objective of offering Broadband capability to homes and businesses. In short, most end-user

premises have at least 2 pairs of wires — one pair from the ILEC and one pair from the cable services provider. There are estimated to be, at a minimum, 9 different carriers deploying hybrid fiber/coax networks for these purposes in the SBC territories alone.[24] In fact, one of these providers is RCN Inc., which operates in, among other areas, the Chicago area. RCN claims to have laid over 3.4 Million miles of fiber in its operating areas through the year end 1999[25]. RCN is referred in the industry to as a "overbuilder," which is a term that is typically used to refer to a firm that deploys an overlay network to that of existing cable service providers for the purposes of offering a suite of Broadband related services to business and consumers. RCN is 21% owned by Level 3 Communications, who also is a CLEC. The "impair" standard outlined in the TA96 and interpreted by the US Supreme Court requires that CLECs provide some form of quantifiable analysis of impairment and illustrate that they are lacking other alternatives to the unbundling of the network elements in question. Although overbuilders such as RCN may not be deploying networks with the intent of providing CLECs with use of their fiber optic facilities, that does not suggest that alternatives do not exist. If one new market entrant can deploy its own facilities, then presumably so can others.

XII. LIT FIBER SUBLOOPS

73. The first item ordered by the ICC in terms of unbundling the Project Pronto architecture is lit fiber subloops between the RT and the OCD consisting of one or more PVPs and/or one or more PVCs at the option of CLEC. It is not technically

[24] Source: Probe Research
[25] Source: RCN Information from RCN Corp. Website

feasible or economically practicable to unbundled any of these "subloops" for the planned Project Pronto architecture.

74. First, in terms of lit fiber sub-loops between the RT and the OCD as a PVP, it is not technically feasible or economically practicable to provide a PVP to an individual CLEC, as explained in the Affidavit of Mr. James Keown.

75. With regards to a PVC, a PVC cannot be offered as an individual unbundled network element either. Because the PVC is a virtual representation of an end user's line within the ATM bitstream and, like the PVP, is a virtual path through the ATM bit stream (riding the aforementioned PVP), the OCD routing and aggregation functionality is necessary to route the PVC to the appropriate CLEC. Therefore, it is technically infeasible to provide a PVC (or a PVP) without the OCD component. Further, both PVPs and PVCs are integral components of the packet switching functionality of the Project Pronto network.

XIII. UNBUNDLED COPPER SUBLOOPS

76. The second item ordered by the ICC consisted of copper subloops consisting of the following segments:

i. The copper subloop from the RT to the NID at the customer premises;

ii. The copper subloop from the RT to the SAI ("serving area interface");

iii. The copper subloop from the SAI to the NID at the customer premises.

77. Unbundling sub-loops from the RT to the NID or SAI is not technically feasible given the current SBC Project Pronto deployment. In its UNE Remand Order, the FCC clearly defined a subloop as follows: "We define subloops as portions of the loop that can be accessed at terminals in the incumbent's outside plant. An

accessible terminal is a point on the loop where technicians can access the wire or fiber within the cable without removing a splice case to reach the wire or fiber within."[26] The FCC clarified this definition as follows: "Accessible terminals contain cables and their respective wire pairs that terminate on screw posts. This allows technicians to affix cross connects between binding posts of terminals collocated at the same point."[27] There is no such access point or ability for technicians to place a cross-connect where a line card is inserted into the NGDLC equipment. Instead, line cards are physically inserted into the backplane connectors and wiring of the NGDLC RT equipment. Copper pairs from the field (i.e., from the SAIs) terminate onto the backplane wiring. Thus, there is no capability to physically access sub-loops at the line card or inside the NGDLC.

78. The third sub-loop segment (cooper sub-loop from the SAI to the NID) is already available to CLECs. This is one of the sub-loops established by the FCC in the UNE Remand Order and is currently available to CLECs, irrespective of Project Pronto.

XIV. ADLU CARDS OWNED BY CLECs/ILECs AS UNEs

79. Another "unbundling" requirement ordered by the Commission was that Ameritech Illinois allow CLECs to own or deploy ADLU line cards as a "UNE" and "collocate" those cards in the NGDLC equipment in the RT. NGDLC line cards are inappropriate for CLEC "collocation," as I explain later in this affidavit. However,

[26] Id at 206

[27] Id at 206 footnote 395

beyond the inappropriateness of CLEC line card "collocation", the Order's logic supporting this particular "UNE" is flawed.

80. The very concept of unbundled network elements implies that such network elements are an existing piece of the *ILEC's* network. A line card that is not owned and/or deployed by the ILEC is not a piece of the ILEC's network. Therefore, such a line card, if owned and provisioned by a CLEC, could neither be offered as a UNE nor provisioned as a UNE. Yet, in addition to ordering Ameritech Illinois to allow CLECs to "collocate" line cards as a means of access to other alleged UNEs (namely the subloop components outlined above), the Commission has also defined the line card as a UNE in and of itself. Thus, the Commission is viewing the same piece of equipment, whether provided by the ILEC or CLEC, in three different manners: As a separate stand-alone UNE when provided by Ameritech Illinois; as a separate stand-alone UNE when provided by a CLEC (despite the fact that the equipment could not be considered part of Ameritech Illinois' network); and as collocation equipment that is not a UNE by itself but purportedly could be used to access other alleged UNEs. An NGDLC line card not only cannot be all those things at once, it is in fact none of them.

81. The "unbundling" of an NGDLC line card owned by the ILEC is not technically feasible. ILECs technically cannot provide CLECs use of a line card as a so-called UNE without the use of all of the other alleged UNEs created by the Order. For example, a line card by itself would provide no practical use to a CLEC. An ADSL service cannot be provided without the use of the entire NGDLC system and associated fiber and copper facilities.

XV. A PORT ON THE OCD IN THE CO AND COMBINATIONS

82. Another new "UNE" created by the Order is a port on the OCD in the CO. This requirement directly violates the UNE Remand Order, where the FCC found that packet switching (which includes the OCD) is not a UNE (except in limited circumstances that do not apply to Ameritech Illinois). Moreover, the CLECs have provided no evidence to show that they would be impaired without unbundled access to the OCD port.

83. The final new "UNE" created by the Order is any combination of the other so-called UNEs mentioned above, including a line shared xDSL loop from the OCD port to the NID. As I explained above, several of the "UNEs" proposed by the Commission are not technically feasible to unbundle and/or would have severe negative capacity and cost impacts upon the planned Project Pronto network architecture for Illinois. Furthermore, there is no basis in the current FCC rules or the Act to establish such UNEs. Accordingly, any proposed UNE combination that could be created from these various new UNEs would also be inappropriate and/or technically infeasible.

84. Furthermore, it would be technically infeasible for Ameritech Illinois, under the planned Project Pronto architecture, to provide CLECs a single unbundled xDSL circuit from the OCD to the NID. As explained above, under the Project Pronto architecture for DSL service, all of the xDSL service provided by a given CLEC is aggregated through the OCD. There is no manner to access one individual xDSL

circuit via the OCD, as there is not a one-to-one correlation between an individual xDSL circuit and the CLEC's form of access from the OCD.

XVI. LINE CARD COLLOCATION

85. In addition to the alleged new "UNEs" , the Commission ordered Ameritech Illinois to permit CLECs to "collocate" their own line cards in Ameritech Illinois' NGDLC equipment deployed in the RT site. There appear to be two reasons why the CLECs want to "collocate" their own NGDLC line cards. The first reason is that CLECs want to be able to provide different "flavors" of xDSL using their own types of line cards in the Project Pronto architecture. The second reason is that the CLECs want to use a "collocated" line card requirement to justify their demand for "unbundled access" to the parts of the Project Pronto architecture on either side of the line card.

86. The first of these reasons is irrelevant because the Project Pronto architecture can currently support ADSL only. Furthermore, SBC has committed to making a G.lite version[28] of the Broadband Service available on an RT-by-RT basis starting within six months after development and commercial availability from Alcatel, the NGDLC manufacturer. Also, as I mentioned previously, SBC will work collaboratively in the future with individual CLECs, groups of CLECs, and the industry at large to introduce additional capabilities into the Project Pronto architecture, subject to the criteria outlined in the FCC's Project Pronto Order.

87. One of these criteria is that the introduction of an additional feature or capability into this architecture will not impair the capacity of the deployed Project Pronto

[28] G.Lite is a xDSL form of service currently under development by Alcatel for future use at this time. However, this service is not available as of the time of this Affidavit.

NGDLC RTs. The types of NGDLC line cards that have been discussed and "wished for" by CLECs (but which do not currently exist) would create exactly this kind of negative capacity impact. The negative capacity impacts of the CLEC's line card collocation proposals are more fully explained in the following section of this Affidavit and in the Affidavit of Mr. James Keown.

88. As I noted above, Alcatel currently provides only an ADSL line card for Project Pronto NGDLCs.CLECs have proposed that third party vendors could or would develop line cards offering other forms of xDSL service for placement within the Project Pronto NGDLC equipment. This proposal is ludicrous and has no factual basis. Each individual vendor's equipment used within the Project Pronto architecture is an integrated system that is proprietary to that vendor. Specifically, Alcatel's NGDLC system consists of hardwired components, plug-in components, and software used within these interconnected components. These pieces work as a complete system in a manner that is proprietary to Alcatel. One vendor's component (e.g., plug-in card) cannot be used within another vendor's proprietary NGDLC system. Line cards made by another vendor cannot be used in Alcatel's NGDLC RT equipment because they will not be compatible with the internal system software, Alcatel's network management systems associated with that equipment, and perhaps even the physical characteristics of the NGDLC equipment shelf and line card slots.

89. Collocation as defined by the FCC and the Act is necessary only for equipment that provides access to existing UNEs. As I explained above, it is not only inappropriate but in most instances technically infeasible to unbundle the Project Pronto

architecture. Furthermore, the Order is clearly inconsistent with the FCC's and the Act's criteria for collocation of equipment, for at least two reasons. First, a piece-part of a unit of equipment, such as an RT line card, does not constitute equipment appropriate for collocation. Second, placement of a line card into the Project Pronto NGDLC would not provide a CLEC with access to any current UNEs or interconnection with the ILEC's network.

90. The line card placed in the Project Pronto NGDLC equipment cannot perform any function by itself, as it is only a piece-part or sub-component of the overall NGDLC RT equipment unit. To use an analogy, the ADLU card is similar to a gear within a wrist-watch. The gear is not the device that provides the time to the wearer of the watch, but instead, is only a piece-part of the watch, and merely works in combination with the rest of the parts of the watch to keep time.

91. Furthermore, the FCC's Project Pronto Order agrees that an ADLU card is just a piece-part, stating that the "plug-in ADLU Card is only one component of an NGDLC system. An NGDLC system typically contains several 'channel bank assemblies,' which are multiplexers used to provide service to end users. In each channel bank assembly, a carrier 'plugs in' cards that are used to provide specific telecommunications services. The ADLU Card is a plug-in card used to provide ADSL service from an NGDLC system. The ADLU Card works in conjunction with other plug-in cards and software to provide such service. In addition to the channel bank assemblies and the associated plug-in cards, DLC systems (including NGDLC systems) also contain a common control assembly that contains multiplexing, power, and other capabilities."

92. In contrast, a CLEC can collocate full items of equipment, such as its own stand-alone DSLAM or its own complete NGDLC RT, at an RT site, where space and environmental factors (heat dissipation and power) allow. A CLEC's ability to collocate such complete items of equipment at a DSL-capable Project Pronto RT site is further enhanced through SBC's voluntary commitments adopted in the FCC's Project Pronto Order.

XVII. SERVICE IMPACTS OF CLEC LINE CARD COLLOCATION

93. There are two major negative capacity impacts of CLEC line card collocation. The first impact is in relation to the availability to slots within the NGDLC RT equipment. Such slots are limited, and placement of CLEC-owned line cards in such equipment would serve to reduce available capacity and dramatically (and negatively) impact maintenance and provisioning processes to provide xDSL service over the Project Pronto architecture. The Affidavit of Mr. James Keown addresses these particular impacts.

94. The second negative capacity impact is related to the type of service CLECs would like to deploy via these line cards. Service such as SDSL do not only negatively impact the physical capacity of the NGDLC equipment, but also dramatically and negatively impact the capacity of DSL service that could be provisioned over the optical transport facilities from the RT site to the OCD. In this section of my Affidavit, I explain the capacity implications of the various services that CLECs appear to desire to deploy with such line card collocation.

95. The type of xDSL service offered by a given line card placed in the Project Pronto NGDLC equipment has a dramatic impact upon the optical transport facility capacity from the RT site to the OCD. For example, one of the cards typically proposed by CLECs is a Symmetrical DSL ("SDSL") line card. SDSL differs from ADSL in that it offers a symmetrical service. This means that with SDSL, the end user is guaranteed the same speed in both directions – upstream and downstream. A typical SDSL service may consist of a guaranteed 1.544 Mbps service in both the upstream and downstream direction. This differs from ADSL, which is asymmetric, i.e. the upstream and downstream speeds differ. A typical ADSL application would be 1.544 MBPS downstream and 384 Kbps upstream. Furthermore, ADSL is typically a non-guaranteed speed service offering. This differs from a typical SDSL service, which offers guaranteed bandwidth dedicated to an end user. A practical analogy to an SDSL service is a T1, which offers a 1.544 MBPS bandwidth allocation in both directions. In fact, in practice, most CLECs market SDSL service to small to medium-sized businesses as a competing service to ILEC-offered T1 service.

96. This last fact is significant, because it shows that these end-user business customers already have other service options available to them today from various competing providers. In contrast, the deployment of Project Pronto DSL facilities is primarily intended to expand high-speed Internet access to mass market consumers. By arguing for an SDSL form of xDSL service, CLECs in effect are seeking to transform the Project Pronto architecture from a consumer-serving vehicle to a business-focused application.

97. As I explained above, were a CLEC to place a hypothetical SDSL line card[29] in SBC's NGDLC equipment, SBC would not only be required to provide to CLECs the ability to place the card, SBC would also have to provide to CLECs a constant, guaranteed bandwidth allocation from the RT to the OCD. This could only be provided via a constant bit rate (CBR) form of transport different from, and occupying more transport capacity than, SBC's current limited CBR offering. The combination of an SDSL line card and CBR ATM QoS would have a major negative impact on the capacity of the Project Pronto network.

98. If SBC provisions a CBR quality of service offering for a CLEC, the CBR service has priority over all of the other services provisioned through that NGDLC system. For example, with the Litespan 2000 NGDLC system, an end user's traffic that is provided using a CBR quality of service has priority over an end user's traffic that is provided using a UBR quality of service. This is an important consideration for SBC in managing service levels in its network.

99. As I explained previously, with the Litespan 2000 technology, all of the DSL traffic from all of the end users terminating in a specific Litespan system, is transported over an OC-3c back to the OCD. An OC-3c consists of 155 Mbpsof bandwidth, of which 135 Mbps of bandwidth is available for use by end user traffic. This bandwidth is available for use by all of the end users that are provisioned across this facility.

100. Because CBR traffic has precedence over UBR traffic, all of the CBR traffic would be provisioned first across this OC-3c, leaving the remaining capacity to be shared

[29] As indicated previously, such a card does not exist today and is not under development .

amongst the remaining UBR traffic. For example, if 100 Mbps of CBR traffic were provisioned across the OC-3c, 35 Mbps (135 Mbps less 100 Mbps) of bandwidth would be available for all of the UBR traffic. Therefore, as more CBR is provisioned, less bandwidth is available for UBR service.

101. This concern is magnified by the fact that UBR is the best class of service for providing high speed Internet access to most end-users. Therefore, as more CBR is added, less and less bandwidth is available for all of the end users requesting such Internet access – in most cases, consumers. This will directly lead to a decrease in the level of service made available to consumers in any state in which such CBR service is deployed. This contradicts the primary goal of Project Pronto, which, as I stated previously, is to expand the availability of broadband Internet access to the mass market – primarily consumers. Thus, a CBR deployment to accommodate CLECs providing SDSL service to business customers would directly lead to a degradation of ADSL service levels to consumers desiring high speed Internet access over the Project Pronto network architecture.

102. In addition to the negative DSL service quality impacts that I have just described, an SDSL-based CBR offering would have other negative capacity impacts on the Project Pronto network. Taking the Litespan 2000 system as an example, SBC can provision approximately 672 end user services across the OC-3c facility. This can only be done when such end user services are provided using the current UBR service level. SBC is able to offer service to the 672 end-user customers mentioned above via a process referred to as statistical multiplexing. This process takes advantage of the fact that not all of the end users served via that facility (the OC-3c

in this instance) are on-line and downloading at exactly the same time. For instance, one end user may be downloading from an Internet site at 20 Kbps, while another may be downloading at 200 Kbps, and another may not even be online at that precise moment in time. Statistical multiplexing allows SBC to "over-subscribe," or to provision service to infinitely more end users than would be possible given constant rates of speed.

103. CBR negatively impacts this process, in that CBR does not provide the capability to over subscribe and/or take advantage of the statistical multiplexing capabilities of the Litespan system. In the case of CBR, the end user is given a true constant connection at a given speed. In the example that I outlined above, this would be a constant, guaranteed 1.544 Mbps downstream bandwidth – regardless of whether that end user was online using the bandwidth or not. This would have an enormous negative capacity impact on SBC's Project Pronto network. Hypothetically, if a CLEC were to provision 1.544 Mbps CBR services to 85 users (1.544 Mbps x 85), all of the 135 Mbps of available transport bandwidth for the OC-3c system would be fully utilized – leaving no remaining bandwidth available for any of the other end users provisioned over the system.

104. Under this scenario, the overall capacity of the Litespan system would be reduced from 672 end users to approximately 85 – thus constituting well over a 600% reduction in overall capacity. In addition to the negative service level impacts that I described above, such a capacity reduction would dramatically increase the costs for DSL service within any state in which it is deployed. Consider that SBC is offering UBR in conjunction with its Broadband Service offering. The rate for the UBR

wholesale service is determined on a per PVC, or permanent virtual circuit, basis. Basically, the costs for all of the equipment used to provide the UBR service is distributed amongst all of the PVCs that are possible with the Litespan system. Each end user would typically be provided one PVC – whether that be a UBR or CBR PVC. Therefore, under SBC's current UBR service, these costs are spread over the 672 potential customers (whether in practice one or 672 customers are actually provisioned service). If SBC were forced to reduce the overall potential number of customers, SBC would have to re-allocate these costs. For example, if the potential end-user capacity were reduced to the 85 end-users mentioned above, SBC would be forced to spread these costs amongst 85 potential end users – in comparison to the original 672 potential end users. Not only would the overall capacity of the NGDLC be reduced by over 600%, the actual cost to provision the Broadband Service or any associated ADSL service to an end user would also increase significantly. Thus, the overall price of DSL services on a per PVC basis, as provisioned over Project Pronto, would dramatically rise.

105. In addition, because of the negative capacity impacts described above, as more and more high-bandwidth CBR service were provisioned, fewer total end users would be capable of obtaining DSL service over the Project Pronto architecture. Therefore, there would be less opportunity for all CLECs to provide service to end users over the Project Pronto network architecture. Such a result would not benefit competition or consumers in Illinois.

XVIII. NEGATIVE IMPACTS ON THE BROADER BROADBAND MARKETPLACE

106. Today, the overall Broadband market in the United States is characterized by numerous providers of Broadband service via many different forms of technology, most of which do not involve ILECs' networks at all. Cable modem providers, DSL providers, Fixed Wireless providers and Direct Broadcast Satellite providers are all seeking to provide broadband service to the same set of end-user customers – those desiring high speed Internet access and other forms of high speed broadband service. As of the year end 2000, at least one market analyst has estimated that there were 35 million dial-up Internet connections within the United States, and slightly more than 5 million residential broadband Internet connections in the United States across all forms of broadband technology. This latter figure is expected to grow to nearly 47 million residential broadband connections by the close of 2005[30]. All of these technologies are competing to provide advanced services to this broader market.

107. As I explained in Section III of this Affidavit, absent SBc's deployment of DSL-related Project Pronto facilities, the broadband service choices for many end-users would be, for the immediate future, limited to cable modem and other forms of broadband service. Ironically, in terms of the impact on consumer choice, deploying these DSL facilities under the onerous requirements imposed by the Commission's Order would be no different than foregoing that deployment all together, for the reasons I explain below.

108. On a very basic and simple micro-economic level, the costs of Project Pronto deployment must be recovered via the services rendered over this architecture. The

[30] Figures as estimated by Morgan Stanley Dean Witter, March 2001.

Order asserts that SBC could recover all of its costs associated with the Project Pronto deployment simply from cost savings alone. However, that assertion is not only incorrect, it fails to consider the significant additional costs that the Order would impose on the deployment of DSL-related Project Pronto facilities. The only means by which SBC, a corporate entity with fiduciary responsibilities to its shareholders, could recover any of the additional costs resulting from the Order would be to include those costs in its prices for the DSL services and "UNEs"offered. As a result, the prices for such "UNEs" and for DSL services provided over Project Pronto would have to be substantially increased – to compensate for the increased costs. As a result, it is clear that SBC would be unable to recover these additional costs.

109. This fact is self-evident when one considers DSL service prices in the context of the overall broadband market. The competing forms of broadband service are all highly price sensitive. Cable modem providers such as AT&T, MediaOne and Cox advertise broadband high speed Internet access ranging from as low as $29.95 to $44.95 per month.[31] DSL providers, including numerous CLECs, are generally offering ADSL/SDSL service at prices of approximately $50.00 per month.[32] DirecPC is offering Direct Broadcast Satellite Broadband capability for approximately $50.00 per month. These marketplace facts illustrate both the price sensitivity of the competing forms of broadband technology and the fact that there is a market-based "price ceiling" for such services. Should any of these technologies be significantly handicapped, in terms of price, in comparison to the other

[31] Source: Morgan Stanley Dean Witter, March 2001.
[32] Id.

competing forms of broadband access, that technology could be effectively eliminated as a viable alternative for end users.

110. The Order in this case would create precisely this scenario for DSL service. Because of the extensive additional costs that Ameritech Illinois would incur if it were to deploy DSL-related Project Pronto facilities under the requirements of the Order , as outlined in the Affidavit of Mr. James Keown, the cost of DSL service would greatly increase. As a result, DSL service provided over the Project Pronto architecture could not be offered at the price points mentioned above – at least in Illinois. SBC would have to attempt to recover its increased costs by raising the price of the SBC Broadband Service offering and through the prices of the new so-called "UNEs" created by the Order. These increased wholesale prices would become increased costs to the CLECs. However, because CLECs would be unable to recover their increased costs at the market-imposed retail price points, those CLECs would simply cease to purchase the Broadband Service or the new Project Pronto "UNEs." In short, DSL service provided over the Project Pronto architecture would become undesirable from both a consumer and a CLEC perspective.

111. Accordingly, regardless of whether Ameritech Illinois were to deploy DSL-related Project Pronto facilities, the Order negatively impacts Illinois consumers. In addition, these facts directly refute the Order's erroneous and unsupported conclusion that SBC could recover its costs of implementing the Order's unbundling requirements.

112. This result would serve not only to damage SBC and other DSL providers in Illinois but also would adversely affect consumers. Today, cable modems have the lion's

share of the greater broadband market – 60% in comparison to 40% for all other forms of broadband combined.[33] Lacking a viable DSL offering, many consumers in Illinois would be limited to cable modem service. As such, there would be less broadband services competition for those consumers. This is the precise reason why Congress expressly mandated regulatory forbearance in the area of Advanced Services in Section 706 of the TA96.

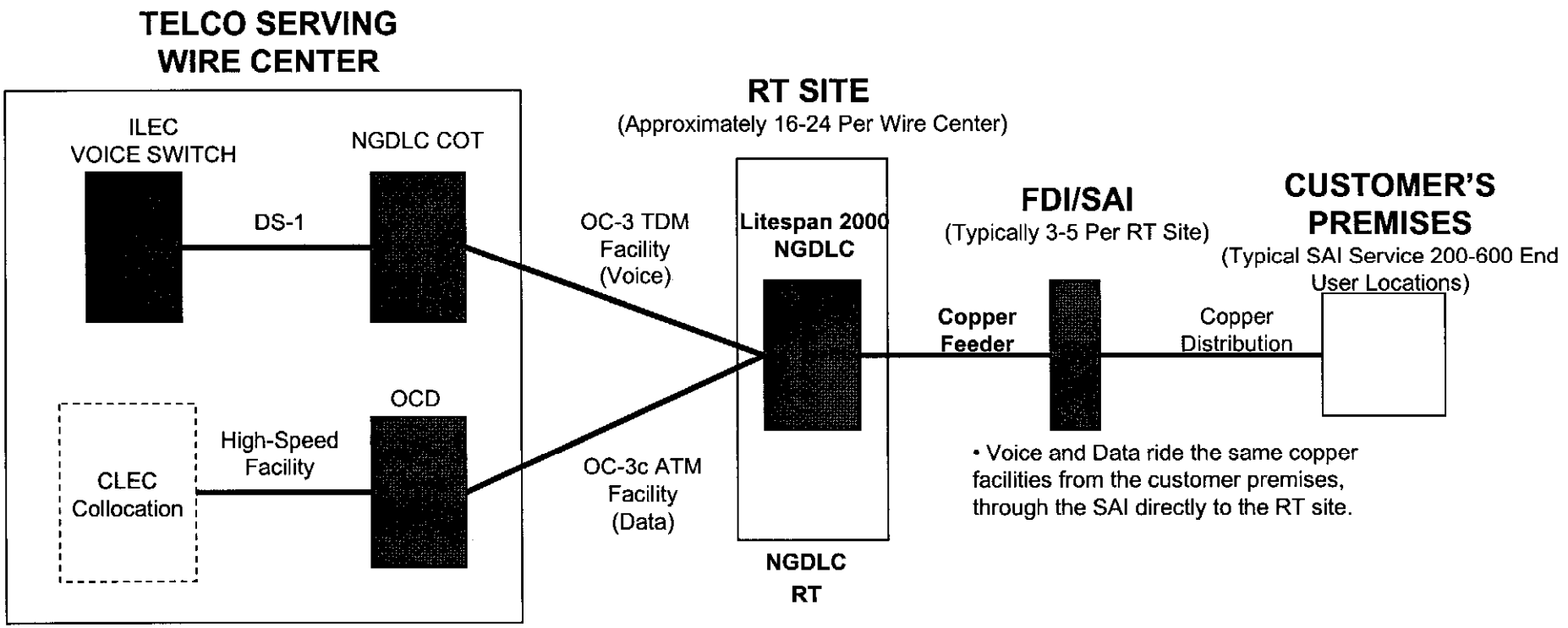
113. This concludes my affidavit.

[33] Id.

PROJECT PRONTO

HIGH LEVEL PROJECT PRONTO ARCHITECTURE

ATTACHMENT CJB-1



• Voice and Data ride the same copper facilities from the customer premises, through the SAI directly to the RT site.

•OCD Serves to aggregate incoming ADSL traffic from each RT site deployed outside of a wire center to the appropriate CLEC.

•ADLU Card is placed within Litespan 2000 NGDLC.
•The card and system itself split the voice and data signals.
•The data signal rides an ATM OC-3c to the OCD.
•The voice rides a separate TDM OC-3 to the COT.

FURTHER AFFIANT SAYETH NOT.

Christopher J Boyer

Christopher Boyer

Subscribed and sworn to before
me this 11th day of April, 2001

Patricia L. Jackson

Notary Public

My commission expires 1/15/03

OFFICIAL SEAL
PATRICIA L JACKSON
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES:01/15/03